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## List of Publications

1. S. Bandyopadhyay, A. Svizhenko and M. A. Stroscio, "Why Would Anyone Want to Build A Quantum Wire Transistor?", *Superlattices and Microstructures*, Vol. 27, No. 2/3, February/March (2000).
2. A. Svizhenko, S. Bandyopadhyay and M. A. Stroscio, "Velocity Fluctuations and Johnson Noise in Quantum Wires: The Effect of Phonon Confinement" *J. Phys.: Condens. Matt.* Vol. 11, 3697-3709 (1999).
3. A. Svizhenko, S. Bandyopadhyay, and M. A. Stroscio, "Johnson Noise in Quantum Wires: Temperature Dependence and the Effect of a High Electric Field ", *Quantum Confinement: Nanostructures (5th International Symposium)*, D. J. Lockwood, M. M. Cahay, J. P. Leburton, and S. Bandyopadhyay, PV 98-19, Boston, Massachusetts, (The Electrochemical Society, Inc., Pennington, New Jersey, 1999)
4. A. Svizhenko, S. Bandyopadhyay and M. A. Stroscio, "Velocity versus momentum relaxation of electrons in a magnetic field", *J. Phys.: Condens. Matt.* Vol. 11, 4009-4019 (1999).
5. A. Balandin, K. L. Wang, R. Li, A. Svizhenko and S. Bandyopadhyay, "The Fundamental 1/f Noise and the Hooge Parameter in Quantum Wires", *IEEE Trans. Elec. Dev.*, Vol. 46, 1240 (1999).
6. A. Svizhenko and S. Bandyopadhyay, "Hot Electron Magneto-transport and Noise in Quantum Wires", invited review article to appear in *Phys. Low Dim. Struct.* (Memorial Issue in honor of Prof. V. A. Grazhulis), November (1998).
7. A. Balandin, K. L. Wang, A. Svizhenko and S. Bandyopadhyay, "The Effect of Low Dimensionality on Quantum 1/f Noise" Invited paper presented at the Seventh Van der Ziel Symposium on Quantum 1/f Noise and Other Fluctuations in Electronic Devices, St. Louis, Missouri, 7-8 Aug. 1998, AIP Conf. Proc. (USA), no.466, 131-134, (1999).
8. S. Bandyopadhyay, A. Svizhenko, D. Yue, L. Menon, A. E. Miller, H-C Chang and V. Yuzhakov, "Natural lithography", presented at the 40th Electronic Materials Conference, Charlottesville, Virginia, June 24-27 (1998). Selected papers to appear in a Special Issue of *J. Elec. Mat.*
9. A. Svizhenko, S. Bandyopadhyay, and M. A. Stroscio, "Effect of Acoustic Phonon Confinement on Momentum and Energy Relaxation of Hot Carriers in Quantum Wires", *J. Phys.: Condensed Matter*, V.10, n.27, 6091-6104, (1998).

10. A. Balandin, K. Wang, A. Svizhenko, S. Bandyopadhyay, "Investigation of the Fundamental 1/f Noise in Semiconductor Quantum Wires", Abstracts of Invited Lectures and Contributed Papers, 6th International Symposium "Nanostructures: Physics and Technology", St. Petersburg, Russia, June 1998.
11. A. Svizhenko, A. Balandin, S. Bandyopadhyay, and M. A. Stroscio, "Electron interaction with confined acoustic phonons in quantum wires subjected to a magnetic field", Phys.Rev. B 57, 4687 (1998)
12. S. Bandyopadhyay, A. Balandin and A. Svizhenko, "Non-Linear Magneto-Optical Properties of Quantum Wires", Invited paper presented at the Advanced Laser Technologies'97 international conference, Limoges, France, September 8-12, 1997, Proc. SPIE - Int.Soc.Opt.Eng. (USA), vol.3404, 302-311, (1998)
13. A. Svizhenko, A. Balandin and S. Bandyopadhyay, "Giant Dipole Effect and Second Harmonic Generation in a Quantum Wire Biased with a Magnetic Field", J. Appl. Phys. Vol. 81, 7927-7933 (1997).
14. A. Svizhenko, A. Balandin and S. Bandyopadhyay, "Infrared Second Harmonic Generation in Magnetic Field Biased Quantum Wires", in Quantum Confinement IV: Nanoscale Materials, Devices and Systems, Eds. M. Cahay, J-P Leburton, D. J. Lockwood and S. Bandyopadhyay, (The Electrochemical Society, Inc., Pennington, New Jersey, 1997). p. 388
15. A. Balandin, A. Svizhenko and S. Bandyopadhyay, "Effective Breaking of Inversion Symmetry in a Quantum Wire with a Magnetic Field", Abstracts of Invited Lectures and Contributed Papers, International Conference on Nanostructures, NANO'97, Repino, Russia, June 1997.
16. A. Balandin, A. Svizhenko and S. Bandyopadhyay, "Third-order Magneto-excitonic Non-linearities in Quantum Wires", Abstracts of Invited Lectures and Contributed Papers, Nanostructures 96, Russian Academy of Sciences, p. 294).
17. A. Svizhenko, V. Poroshin, O. Sarbey, "Anisotropy of Optical Characteristics of Low-Dimensional and Bulk Many-Valley Semiconductors", p. 179-180, NATO Advanced Studies Institute on Devices Based on Low-Dimensional Semiconductor Structures, Sozopol, Bulgaria, Sept. 1995, edited by M. Balkanski, NATO ASI Partnership Series: 3: Volume 14.(1996)
18. E. V. Buzaneva, A. D. Gorchinsky, V. V. Levandovskiy, G. D. Popova, A. V. Svizhenko, A. Belyaev and V. Bykov, "Nanoscale Characterization of Interfaces in Micron/Submicron Structures", p. 169-209, NATO Advanced Studies Institute on Frontiers in Nanoscale Science of Micron/Submicron Devices, Kyiv, Ukraine, Aug. 1995, edited by A.-P. Jauho, NATO ASI Partnership Series: E: Volume 328.(1996)

## Conference Presentations

1. A. Svizhenko, M.P. Anantram, and T.R. Govindan, "2D Quantum Simulation of MOSFET Using the Non-Equilibrium Green's Function Method", 7th International Workshop on Computational Electronics, Glasgow, Scotland, May 22-25, 2000.
2. A. Svizhenko, "2D Modeling in MOSFETs: Non-Equilibrium Green's Function Approach", presented at the 196th Meeting of the Electrochemical Society; symposium on Advanced Luminescent Materials and Quantum Confinement, Honolulu, Hawaii, Fall 1999
3. A. Svizhenko, S. Bandyopadhyay, and M. A. Stroscio, "Velocity Fluctuations and Johnson Noise in Quantum Wires: The Effect of Phonon Confinement", presented at the 194th Meeting of the Electrochemical Society; Fifth International Symposium on Quantum Confinement: Nanostructures, Boston, Massachusetts, Fall 1998
4. A. Balandin, K. Wang, A. Svizhenko, S. Bandyopadhyay, "Investigation of the Fundamental 1/f Noise in Semiconductor Quantum Wires", to be presented at 6th International Symposium "Nanostructures: Physics and Technology", St. Petersburg, Russia, June 1998.
5. A. Svizhenko, S. Bandyopadhyay, and M. A. Stroscio, "Momentum and Energy Relaxation of Confined Hot Carriers Interacting With Confined Acoustic Phonons in a Magnetic Field Biased Quantum Wires: Possibility of Population Inversion", March Meeting of the American Physical Society, Los Angeles, CA 1998.
6. S. Bandyopadhyay, A. Balandin and A. Svizhenko, "Non-Linear Magneto-Optical Properties of Quantum Wires", Invited paper presented at the Advanced Laser Technologies'97 international conference, Limoges, France, September 8-12, 1997.
7. A. Svizhenko, A. Balandin and S. Bandyopadhyay, "Linear and Non-linear Magneto-optical Properties of a Quantum Wire Associated with Inter-Magnetoelectric Subband Resonances", presented at the Tenth International Conference on Superlattices, Microstructures and Microdevices, Lincoln, Nebraska, USA, July 8-11, 1997.
8. A. Balandin, A. Svizhenko and S. Bandyopadhyay, "Refractive Index of a Quantum Wire Around a Polariton Resonance", presented at the Tenth International Conference on Superlattices, Microstructures and Microdevices, Lincoln, Nebraska, USA, July 8-11, 1997.
9. A. Svizhenko, A. Balandin and S. Bandyopadhyay, "Infrared Second Harmonic Generation in Magnetic Field Biased Quantum Wires", presented at the 191st Meeting of the Electrochemical Society; Fourth International Symposium on Quantum Confinement: Nanoscale Materials, Devices and Systems, Montreal, Canada, May 4-9, 1997.

10. A. Balandin, A. Svizhenko and S. Bandyopadhyay, "Non-linear optical mixing in quantum wires", presented at the 191st Meeting of the Electrochemical Society; Fourth International Symposium on Quantum Confinement: Nanoscale Materials, Devices and Systems, Montreal, Canada, May 4-9, 1997.
11. A. Svizhenko, A. Balandin and S. Bandyopadhyay, "Giant Dipole Effect and Second Harmonic Generation in Magnetic Field Biased Quantum Wires", Spring Meeting of the American Physical Society, Kansas City, MO, 1997.
12. S. Bandyopadhyay, A. Balandin and A. Svizhenko, "Dielectric Enahancement of the Oscillator Strengths and Binding Engeries of Magneto- Excitons and Biexcitons in a Quantum Wire" Spring Meeting of the American Physical Society, Kansas City, MO, 1997.
13. A. Balandin, A. Svizhenko and S. Bandyopadhyay, "Effective Breaking of Inversion Symmetry in a Quantum Wire with a Magnetic Field", presented at the International Conference on Nanostructures, NANO'97, Repino, Russia, June (1997).
14. A. Balandin, A. Svizhenko and S. Bandyopadhyay, "Non-linear magneto-optical properties of quantum wires", presented at the Midwest Solid State Physics Symposium, University of Nebraska, Lincoln, October 17, 1996.
15. A. Balandin, A. Svizhenko and S. Bandyopadhyay, "Third-order Magneto-excitonic Non-linearities in Quantum Wires", presented at Nanostructures 96, St. Petersburg, Russia, June 24-28, 1996 (also in Abstracts of Invited Lectures and Contributed Papers, Nanostructures 96, Russian Academy of Sciences, p. 294).
16. A. Svizhenko, V. Poroshin, O. Sarbey, "Anisotropy of Optical Characteristics of Low-Dimensional and Bulk Many-Valley Semiconductors", presented at the NATO Advanced Studies Institute on Devices Based on Low-Dimensional Semiconductor Structures, Sozopol, Bulgaria, Sept.(1995).

### **Invited Talks**

1. A. Svizhenko, "Suppression of Thermal Noise in Semiconductor Quantum Wires", VIII van der Ziel Symposium on Quantum 1/f Noise in Electronic Devices, University of Missouri, St. Louis, June 5-6, 2000
2. A. Svizhenko, "Monte Carlo Simulation of Thermal Noise in Quantum Wires and a Possibility of a Creative Noise Engineering", Univercity of California, Riverside, November 15, 1999.